

MERMAid

National Coastal Data Development Center's Metadata Enterprise Resource Management Aid

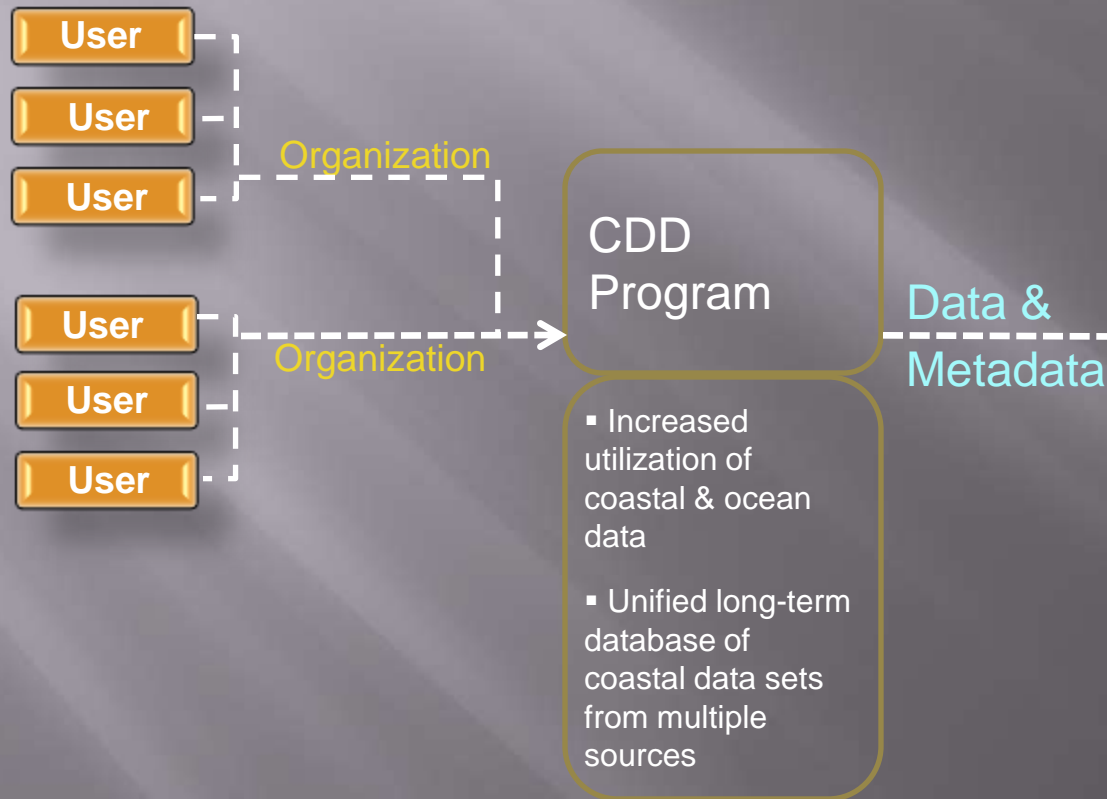
Presented By: Stacy Ladnier, MERMAid Technical Lead
NESDIS Metadata Enterprise IT Meeting
Asheville, NC August 26, 2009

Overview

- ▣ Perspectives
- ▣ Background
- ▣ User Community
- ▣ MERMAid 2.0
- ▣ New Data Entry Interfaces
- ▣ Architecture
- ▣ Services

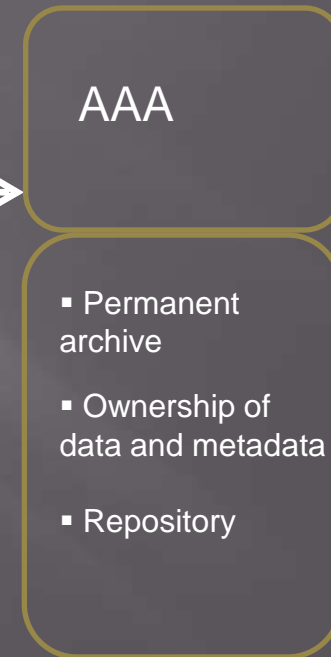
Two Perspectives within NESDIS Data Architecture

External Metadata Services



“... Ensure the Quality of Metadata”

Long-Term Stewardship



“Long-term stewardship of past, present & future environmental observations”



Background

- Remote web access
- Accounts can be distributed to organizations external to NOAA
- No licensing fees
- Ability to support multiple profiles
- Full feature validation
- Hierarchy to support multiple record collections from variety of customers
- Publish metadata to several external destinations

User Community

- ▣ Over 500 user accounts
 - NOAA - 5 Line Offices and 20+ activities
 - USGS
 - Bureau of Land Management
 - US Army Corps of Engineers
 - US Navy
 - NASA
 - Gulf of Mexico Alliance
 - 30 universities, schools and laboratories
 - States Agencies: AK, AL, AZ, FL, LA, MA, MS, TX
 - Non-Governmental Organizations
 - Private Industry and Individuals
 - International (mainly from universities and labs)
 - and more ...

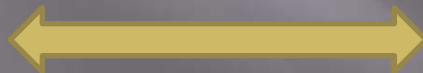
Metadata Enterprise Resource Management Aid (MERMAid 2.0)



XRX

<XML/>

REST



<XML/>

XRX - MERMAid. 2.0

```
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    <xf:model>
    <xf:/model>
  </head>
  <body>
    <xf:input>
    </xf:input>
  </body>
</html>
```

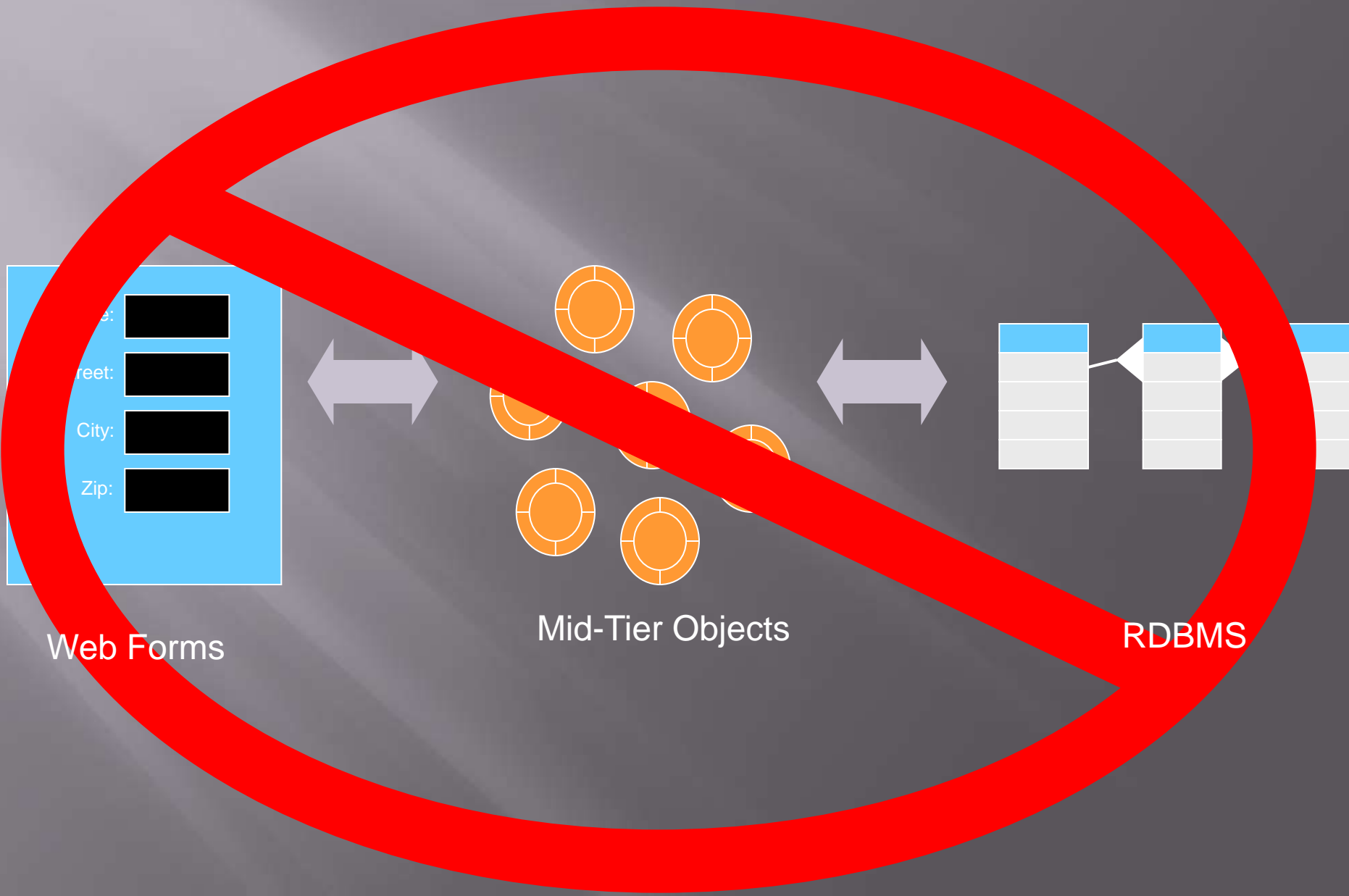
XFORMS

REST

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  <themekey>GIS</themekey>
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<theme>
  <themekt>Habitat</themekt>
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  <themekey>rivers</themekey>
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```

**Native XML
Database**

Web Applications



XSLT Processor

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2   xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
3   xmlns:oxf="http://www.orbeon.com/oxf/processors">
4
5   <p:param name="instance" type="input"/>
6
7   <p:processor name="oxf:xslt-2.0">
8     <p:input name="config" href="#instance#xpointer(/methodCall/xslt/xsl:stylesheet)"/>
9     <p:input name="data" href="#instance#xpointer(/methodCall/thexml/*)"/>
10    <p:output name="data" id="transformedXML"/>
11  </p:processor>
12
13  <p:processor name="oxf:xml-serializer">
14    <p:input name="data" href="#transformedXML"/>
15    <p:input name="config"><config/></p:input>
16  </p:processor>
17 </p:config>
```

Native XML Database

```
<html>
  <head>
    <xf:model>
    <xf:/model>
  </head>
  <body>
    <xf:input>
    </xf:input>
  </body>
</html>
```

XFORMS

REST



```
<SPEECH>
<SPEAKER>HAMLET</SPEAKER>
<LINE>Rest, rest, perturbed spirit!</LINE>
<STAGEDIR>They enter</STAGEDIR>
<LINE>So, gentle...</LINE>
<LINE>...all my... do... you...</LINE>
<LINE>...so... a man... is...</LINE>
<LINE>...to... his... to... you...</LINE>
<LINE>...to... together...</LINE>
<LINE>...our... you... I...</LINE>
<LINE>The time is out of joint: O cursed spite,</LINE>
<LINE>That ever I was born to set it right!</LINE>
<LINE>Nay, come, let's go together.</LINE>
</SPEECH>
```

Native XML
Database

Many small vs. One Large

CSS

XForms

XLink

XPath

XQuery

XML Schema

Schematron

vs.

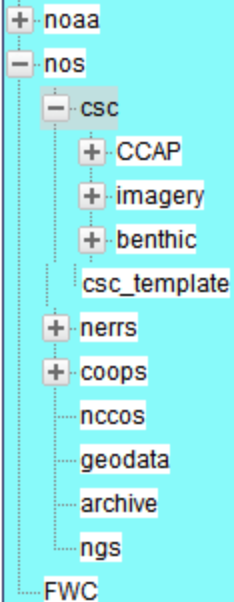


New Look and Feel

The screenshot displays the Species Cataloger application interface. The main form includes fields for taxonomic classification: Kingdom, Subkingdom, Superdivision, Division, Subdivision, Phylum, Subphylum, Class, Subclass, Superorder, and Order. There are also fields for higher-level classification: Superorder, Infraorder, Family, and Subgenus. A 'Publication Date' field is present, with a validation error message stating: 'The date defined is not in a valid format. It must be be in the form YYYY or YYYYMM or YYYYMMDD'. A calendar widget is visible, showing February 2009. A 'Description' pop-up window is open, showing a summary description and type. An 'Originators' list is also visible, showing 'Your name here, NOAA/NESDIS/NODC/NCDDC'. The interface includes a 'CMS' button and an 'Import' button. A 'New' button and a 'Remove' button are also visible at the bottom right.

New Look and Feel

MERMAid







[Return to Main](#)
[Preferences](#)
[Support](#)
[Log Out](#)



[+ Add Collection](#) [+ Add Record](#) [🔄 Ingest](#)

nos/csc

	Title	Status	Size	Date Saved Last
<input type="checkbox"/>	 CCAP	nos/csc	Size here	August 20, 2009
<input type="checkbox"/>	 benthic	nos/csc	Size here	August 20, 2009
<input type="checkbox"/>	 imagery	nos/csc	Size here	August 20, 2009
<input type="checkbox"/>	 csc_template	Status Here	24	August 20, 2009

[🗑 Change ID](#) [🗑 Delete](#) [🗑 Cut](#) [🗑 Copy](#) [🗑 Prune](#) [🗑 Select All](#)

Services

Promoting Flexibility and Collaboration



VALIDATION

Spatial_Data_Organization_Information:

Direct_Spatial_Reference_Method:

This is a mandatory element.

Point_and_Vector_Object_Information:

A selection must be made between the Point and Vector Object Information or the Raster Object Information elements. Determine which element best describes the data and delete the other(s) using the Manage Compounds Service Tab.

SDTS_Terms_Description:

A selection must be made between the SDTS Terms Description or the VPF Terms Description elements. Determine which element best describes the data and delete the other(s) using the Manage Compounds Service Tab.

SDTS_Point_and_Vector_Object_Type:

This is a mandatory element.

VPF_Terms_Description:

A selection must be made between the SDTS Terms Description or the VPF Terms Description elements. Determine which element best describes the data and delete the other(s) using the Manage Compounds Service Tab.

VPF_Topology_Level:

This is a mandatory element.

VPF_Point_and_Vector_Object_Information:

VPF_Point_and_Vector_Object_Type:

This is a mandatory element.

VPF_Object_Information:

-<abstract>

A Tucker-trawl survey along the upper bay axis was conducted to collect ichthyoplankton and zooplankton samples. At each station, a 1-m2 mouth opening Tucker trawl with 280-µm mesh net was fished for 2-minutes in the bottom, mid-depth, and surface layers to provide three depth-discrete samples. Seven stations were sampled on 9-10 October for a total of 21 samples. Additional Tucker-trawl samples were collected during the first 26 hour time series (8-9 October, see below). Ctenophores (Mnemiopsis leidyi) were collected throughout the study area.

<abstract>

<purpose>Bio-physical Interactions in the Turbidity Maximum </purpose>

<supplinf> </supplinf>

</descrip>

-<timeperd>

-<timeinfo>

-<rngdates>

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<begtime> </begtime>

<enddate>20021015 </enddate>

<endtime> </endtime>

</rngdates>

<timeinfo>

<current>ground condition </current>

</timeperd>

-<status>

<progress>Complete </progress>

<update>None Planned </update>

</status>

Services

Promoting Flexibility and Collaboration

TRANSFORMATION

- <abstract>

A Tucker-trawl survey along the upper bay axis was conducted to collect ichthyoplankton and zooplankton samples. At each station, a 1-m² mouth opening Tucker trawl with 280-µm mesh net was fished for 2-minutes in the bottom, mid-depth, and surface layers to provide three depth-discrete samples. Seven stations were sampled on 9-10 October for a total of 21 samples. Additional Tucker-trawl samples were collected during the first 26 hour time series (8-9 October, see below). Ctenophores (*Mnemiopsis leidyi*) were collected throughout the study area.

</abstract>

<purpose>Bio-physical Interactions in the Turbidity Maximum </purpose>

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</marc:datafield>

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<marc:subfield code="a">None</marc:subfield>

</marc:datafield>

- <marc:datafield tag="520" ind1="3" ind2=" ">

- <marc:subfield code="a">

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<marc:subfield code="a">Tucker-trawl survey</marc:subfield>

- <marc:subfield code="b">

Survey conducted to collect ichthyoplankton and zooplankton samples. -

Services

Promoting Flexibility and Collaboration

- <abstract>

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</abstract>

<purpose> Bio-physical Interactions in the Turbidity Maximum </purpose>

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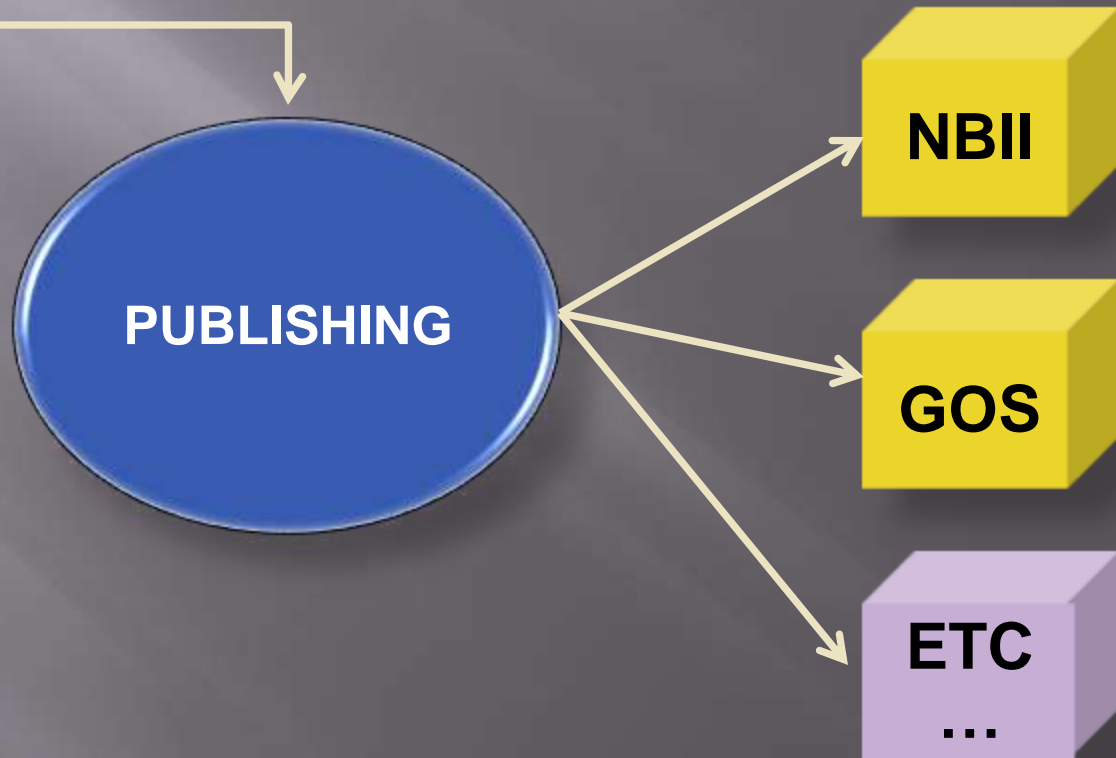
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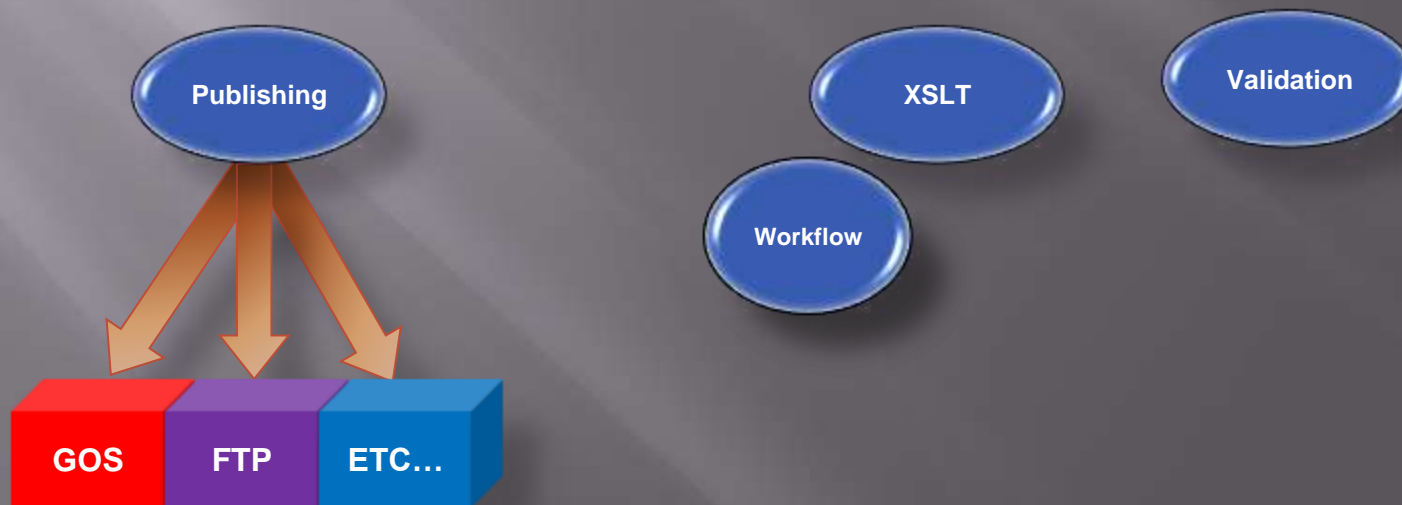
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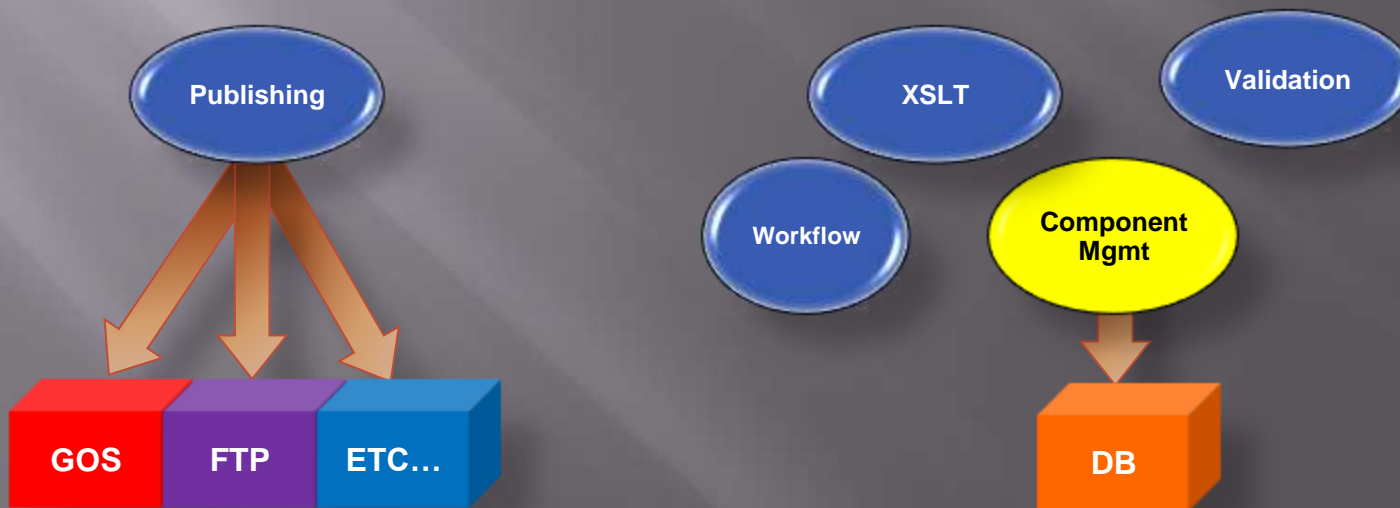
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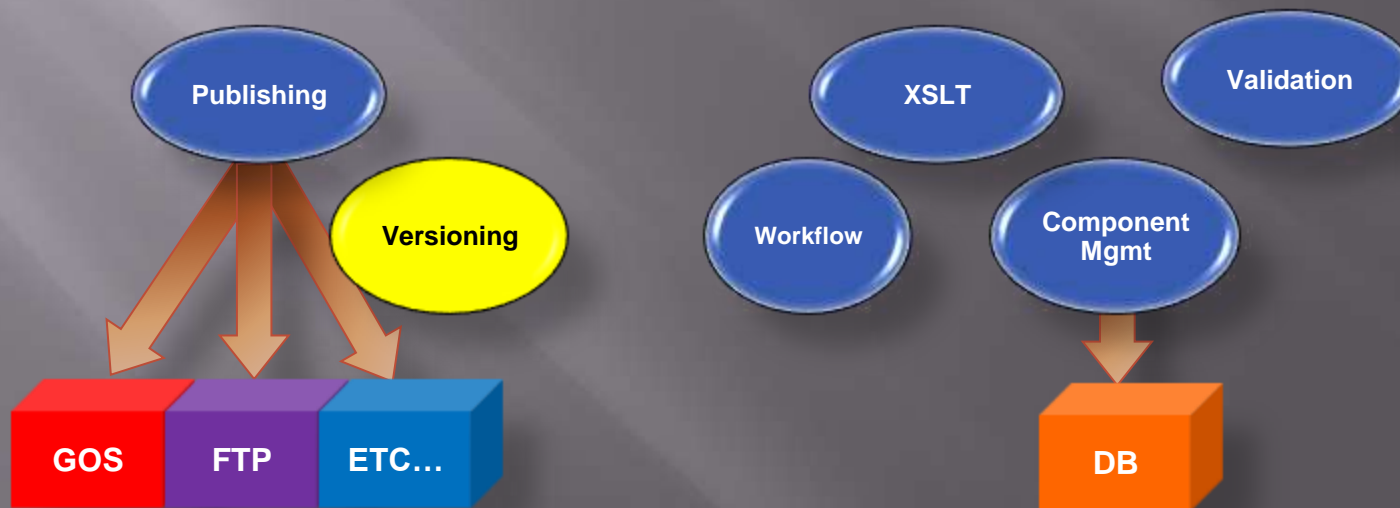
Services



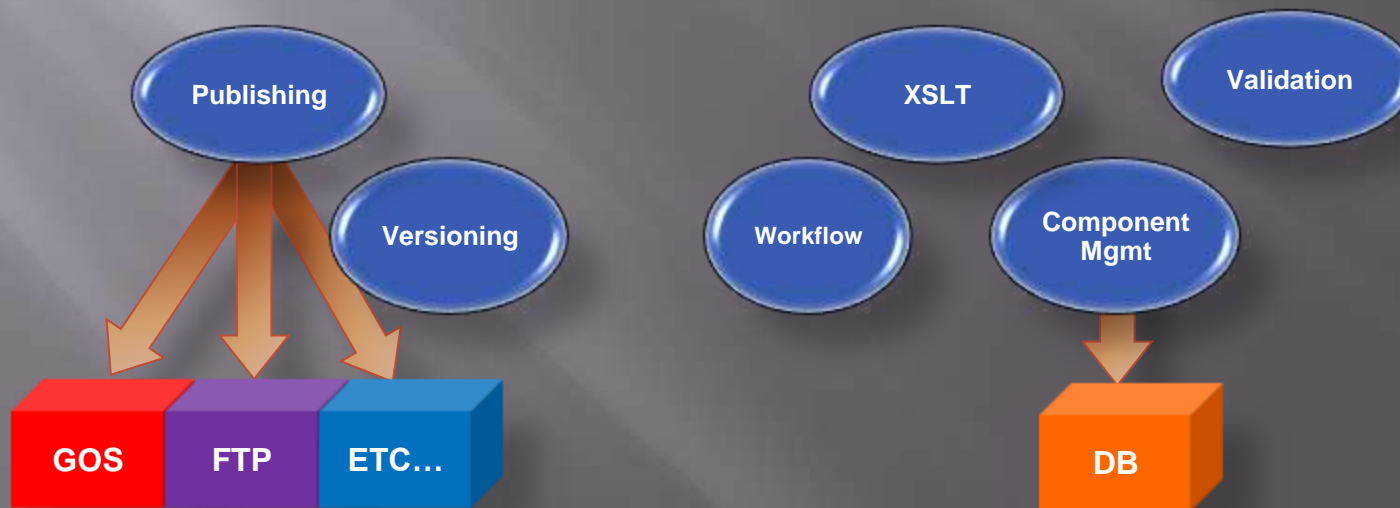
Services



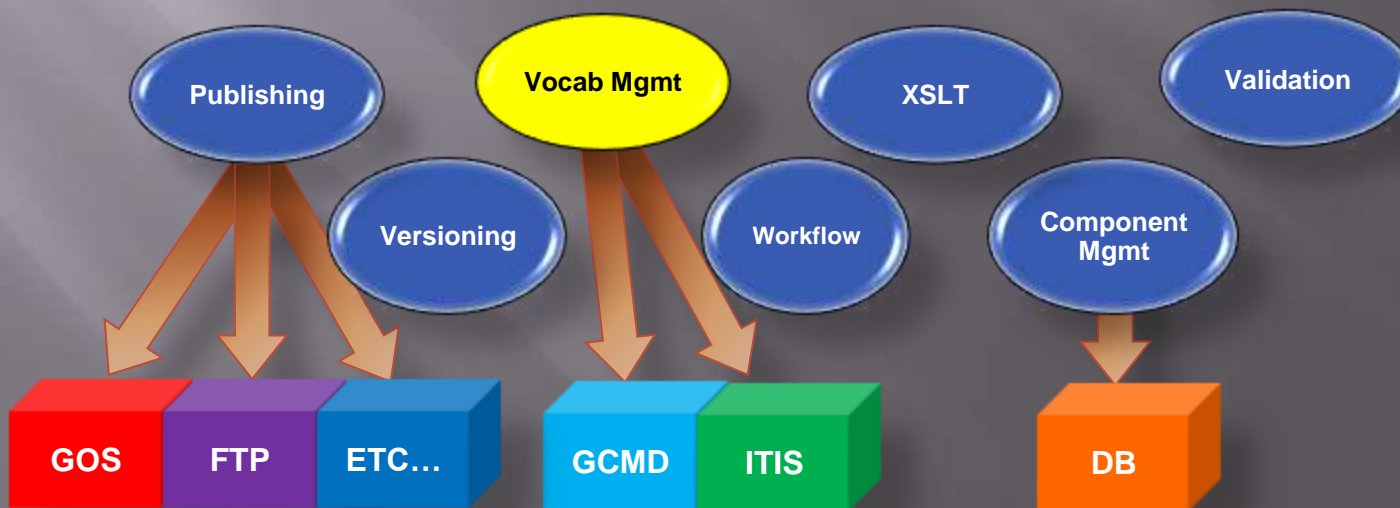
Services



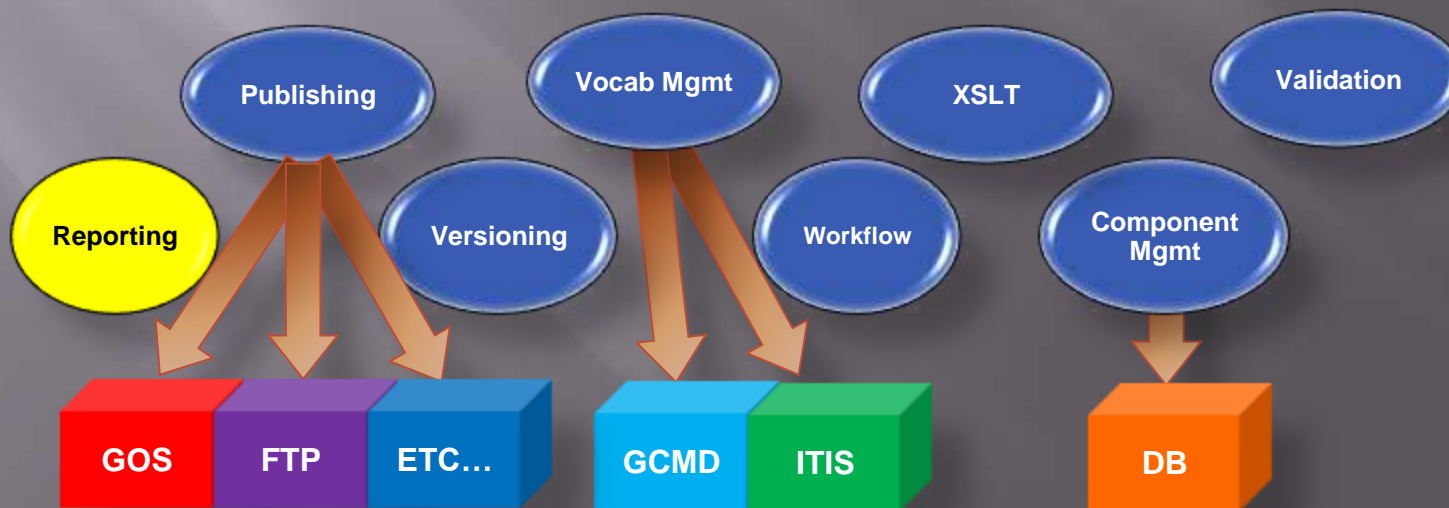
Services



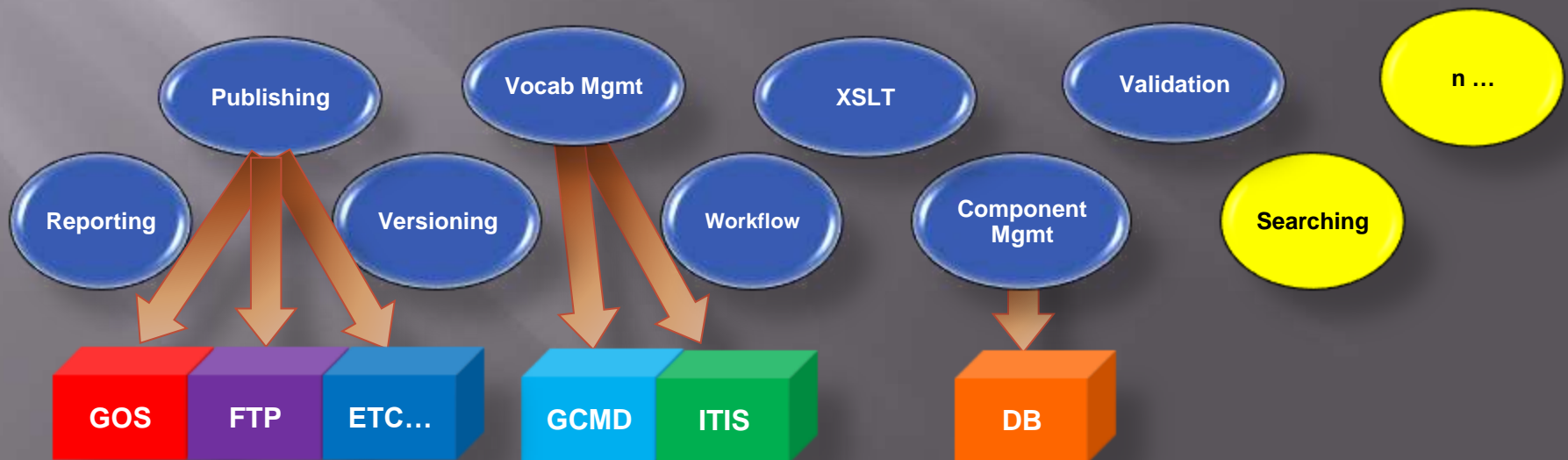
Services



Services



Services



Services

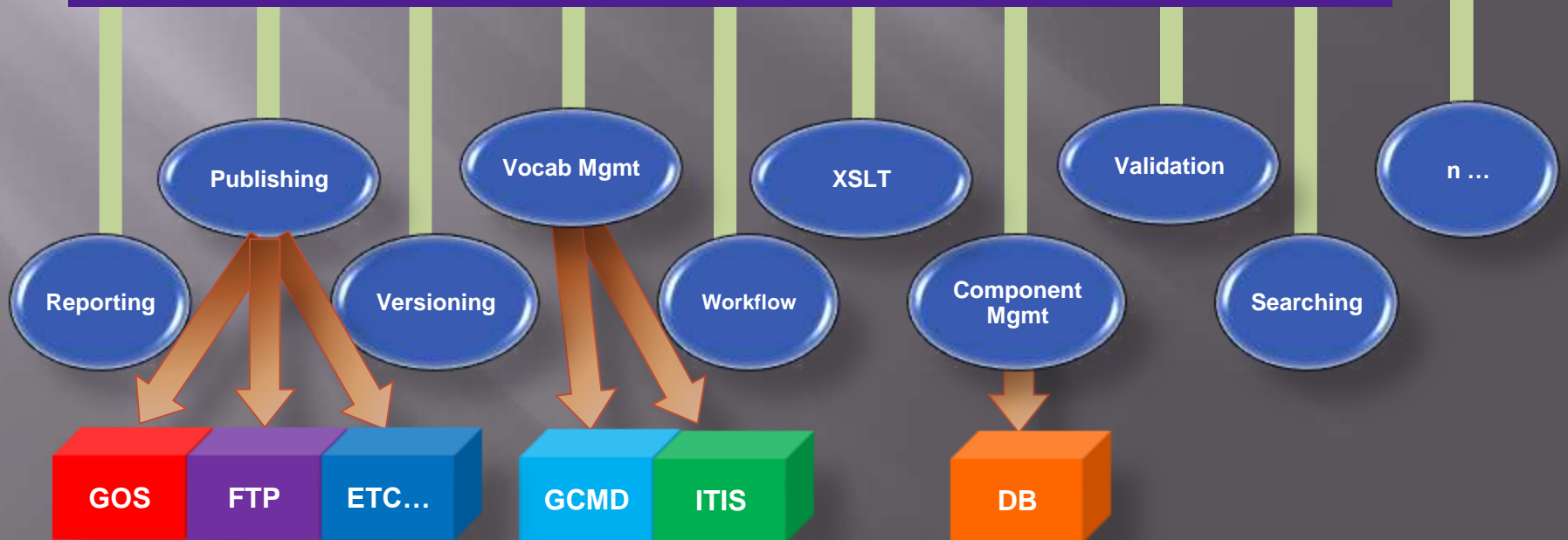


SECURITY - AUTHORIZATION / AUTHENTICATION (Account Management Service)

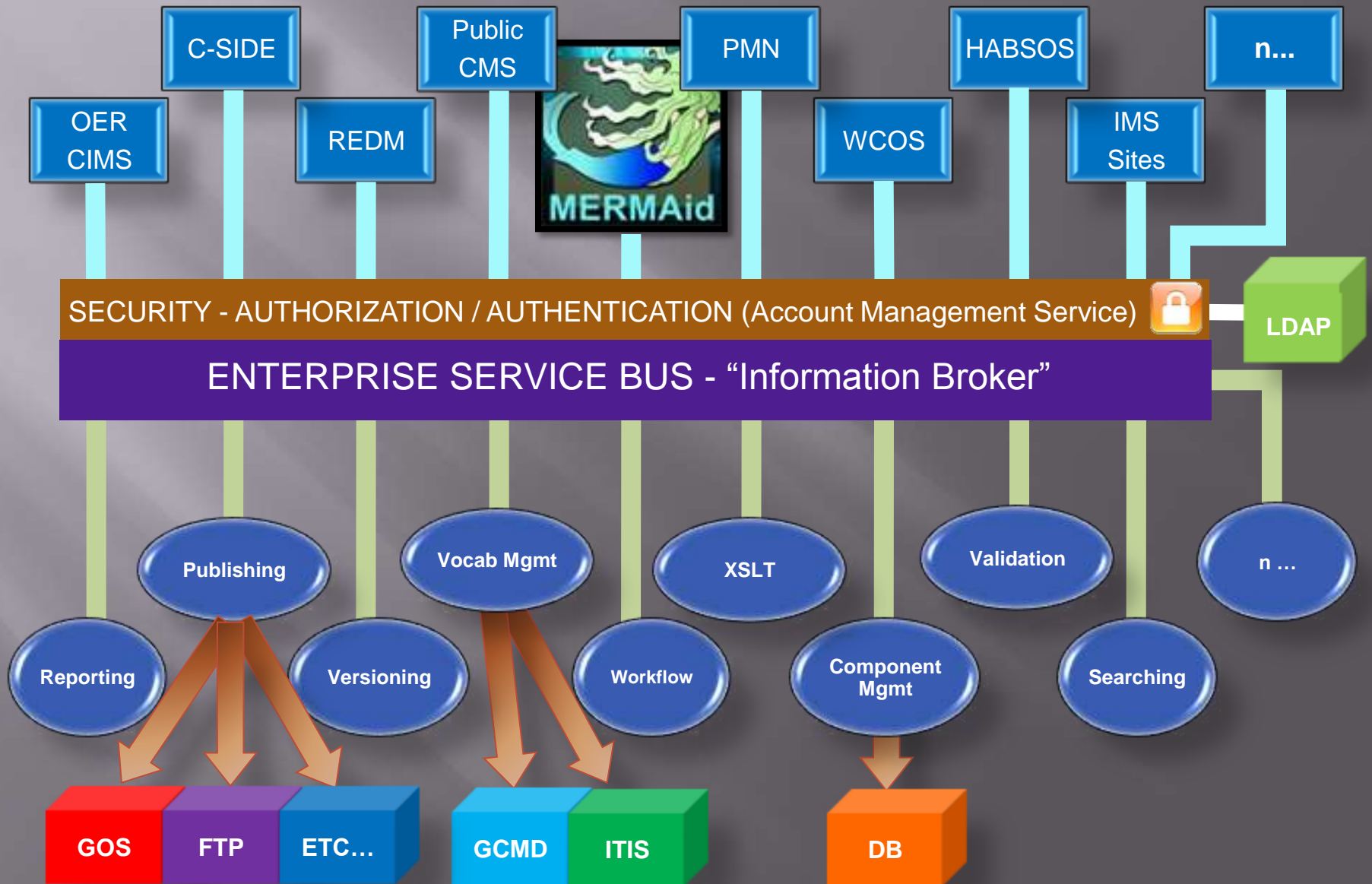


LDAP

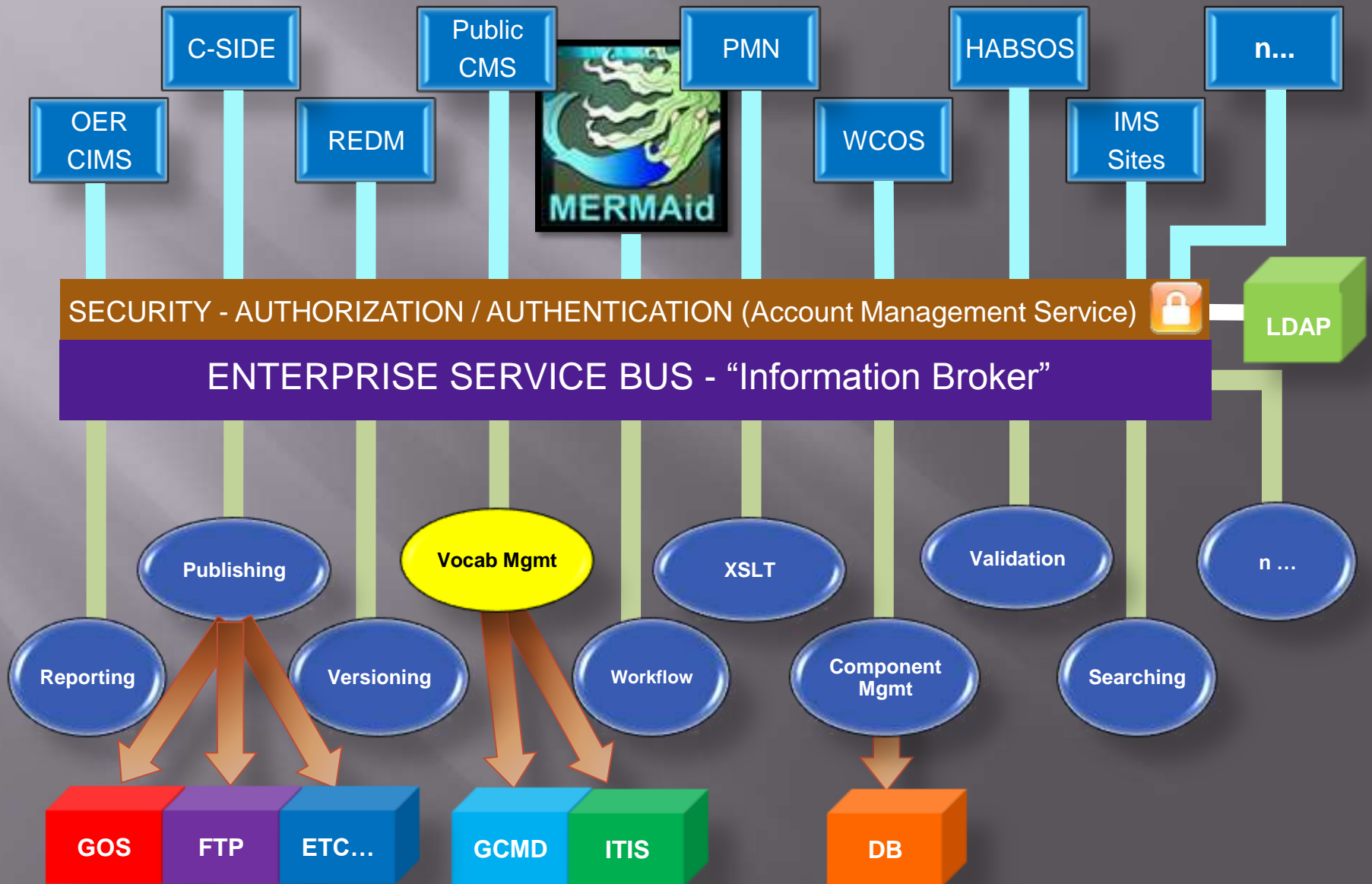
ENTERPRISE SERVICE BUS - "Information Broker"



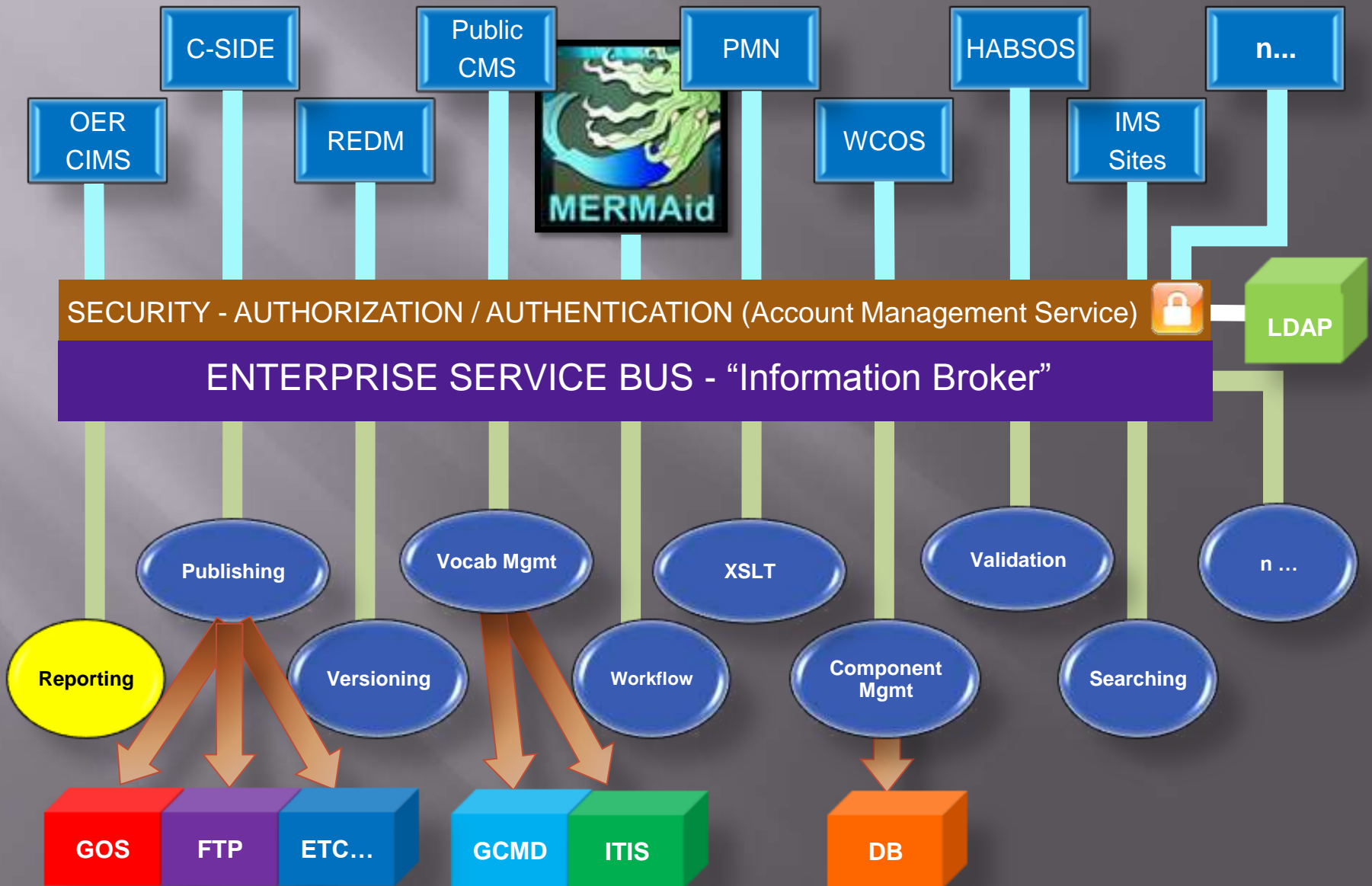
Services



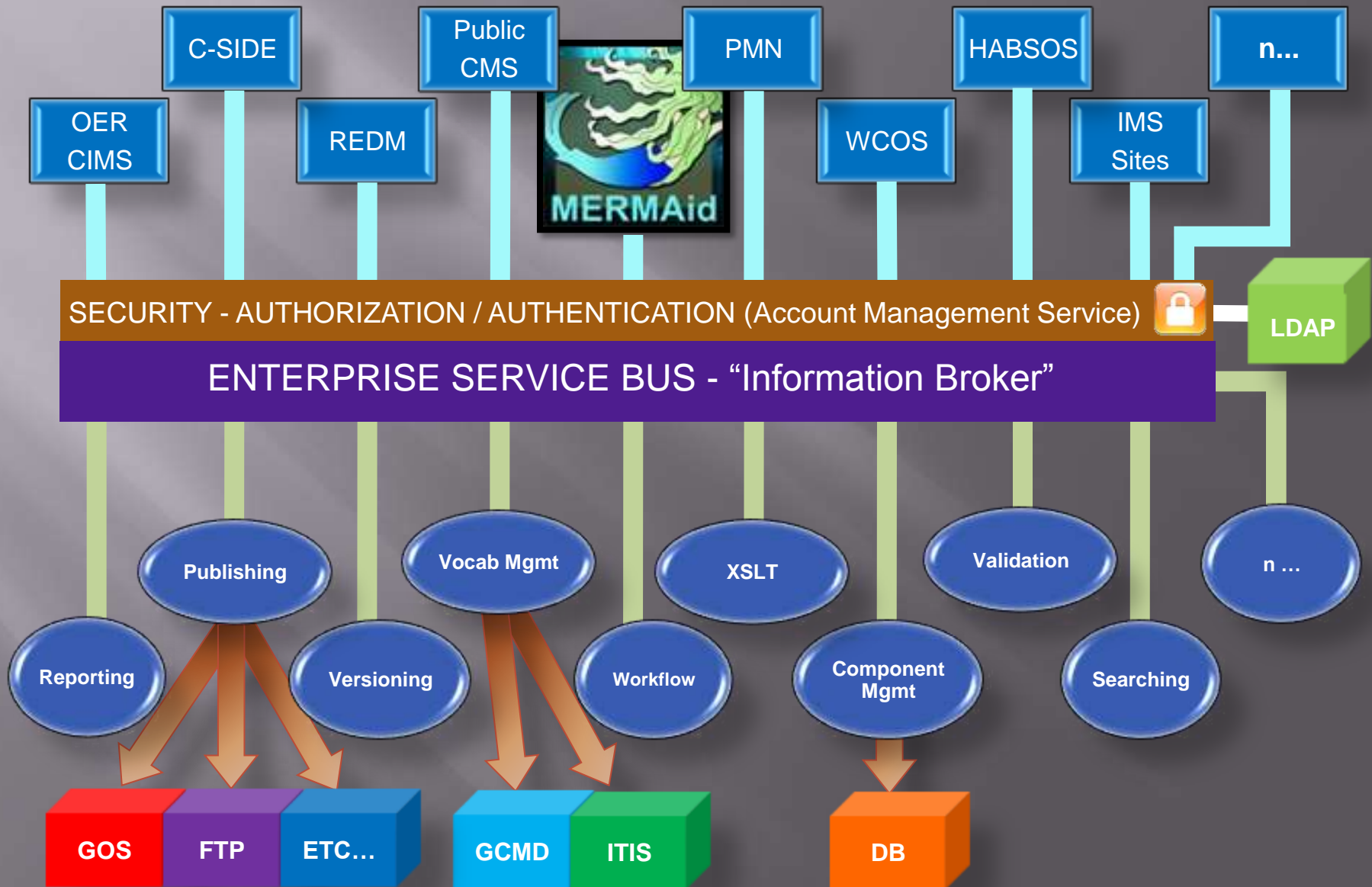
Services



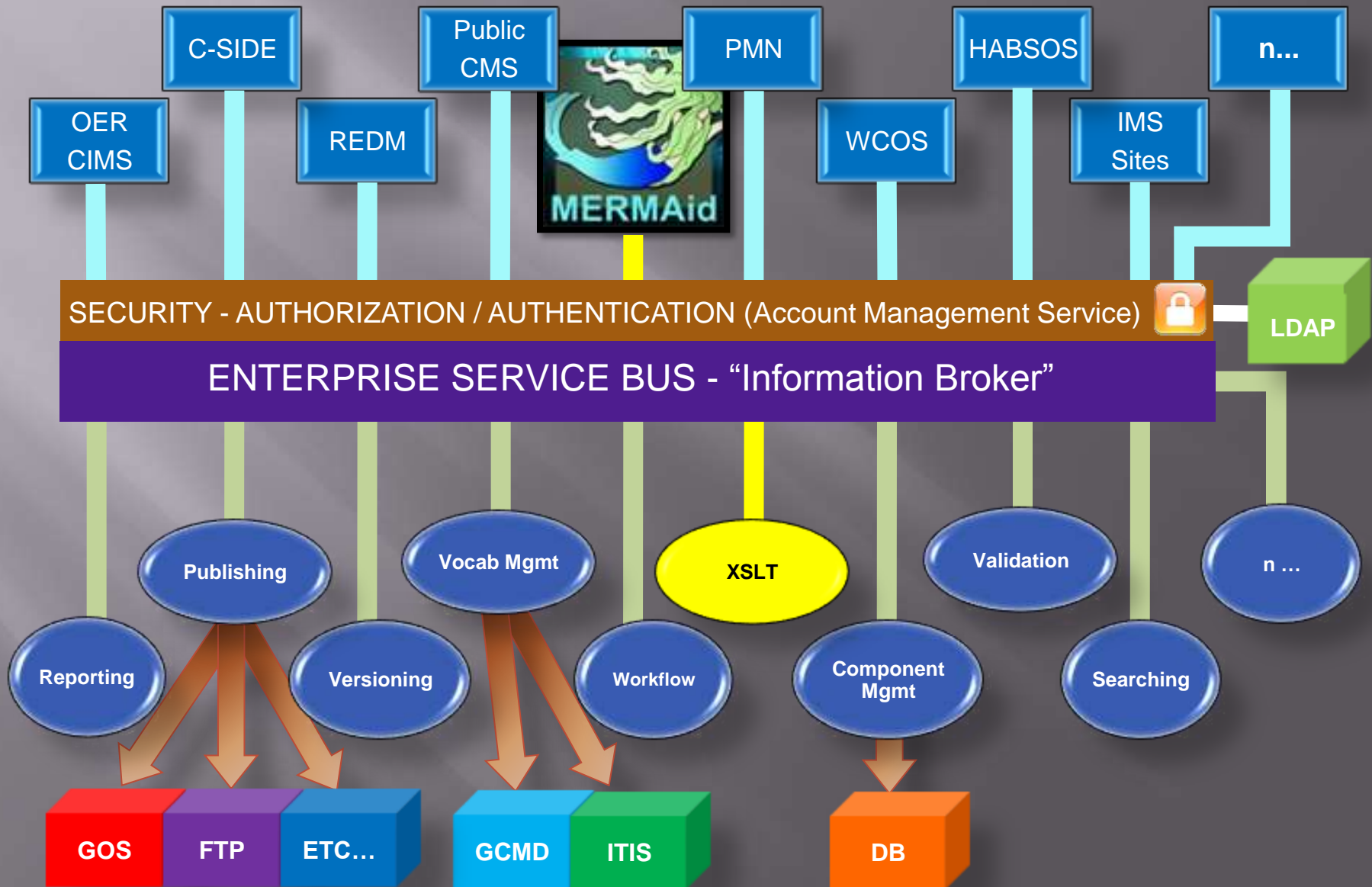
Services



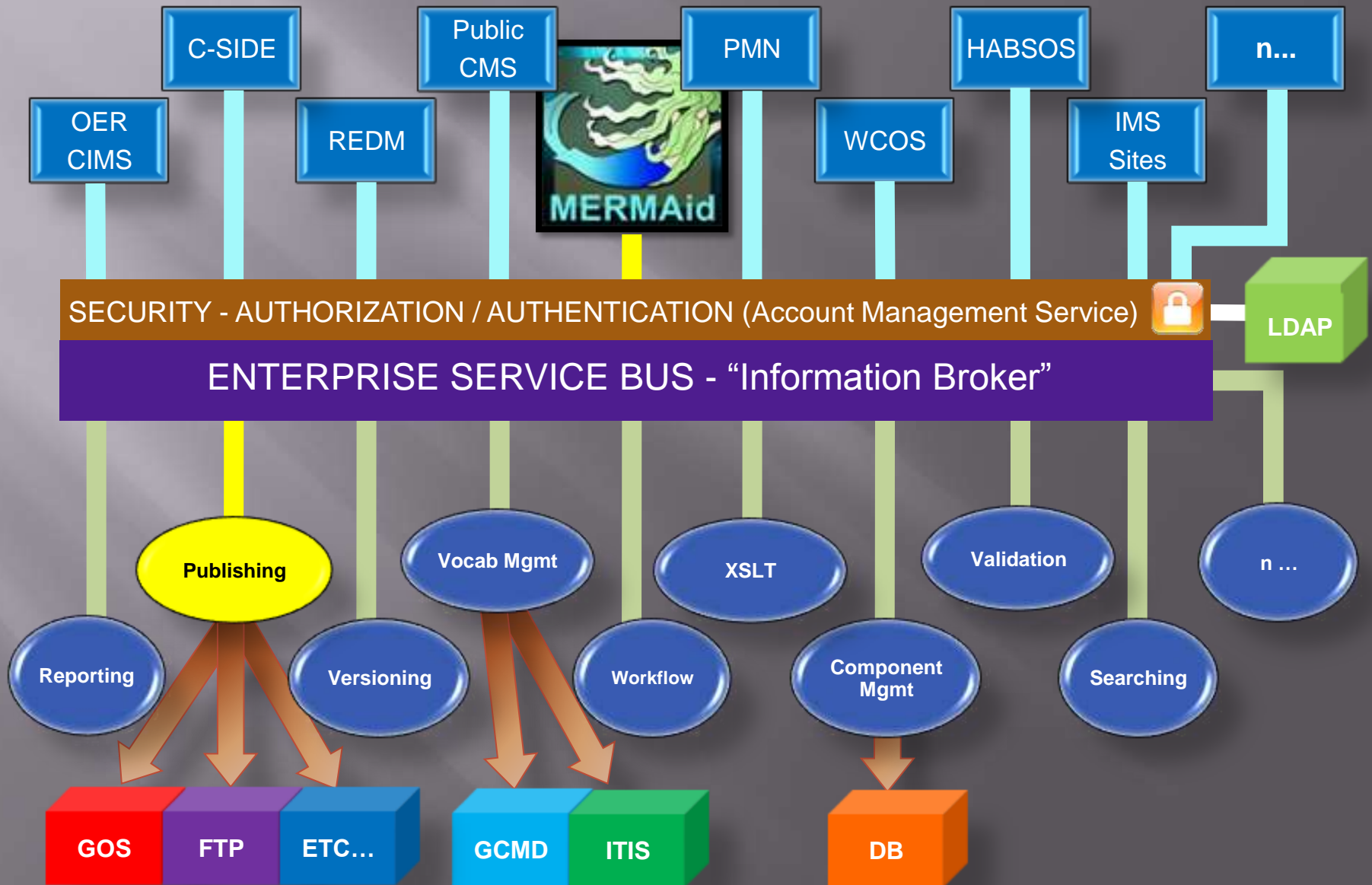
Louisiana Department of Natural Resources



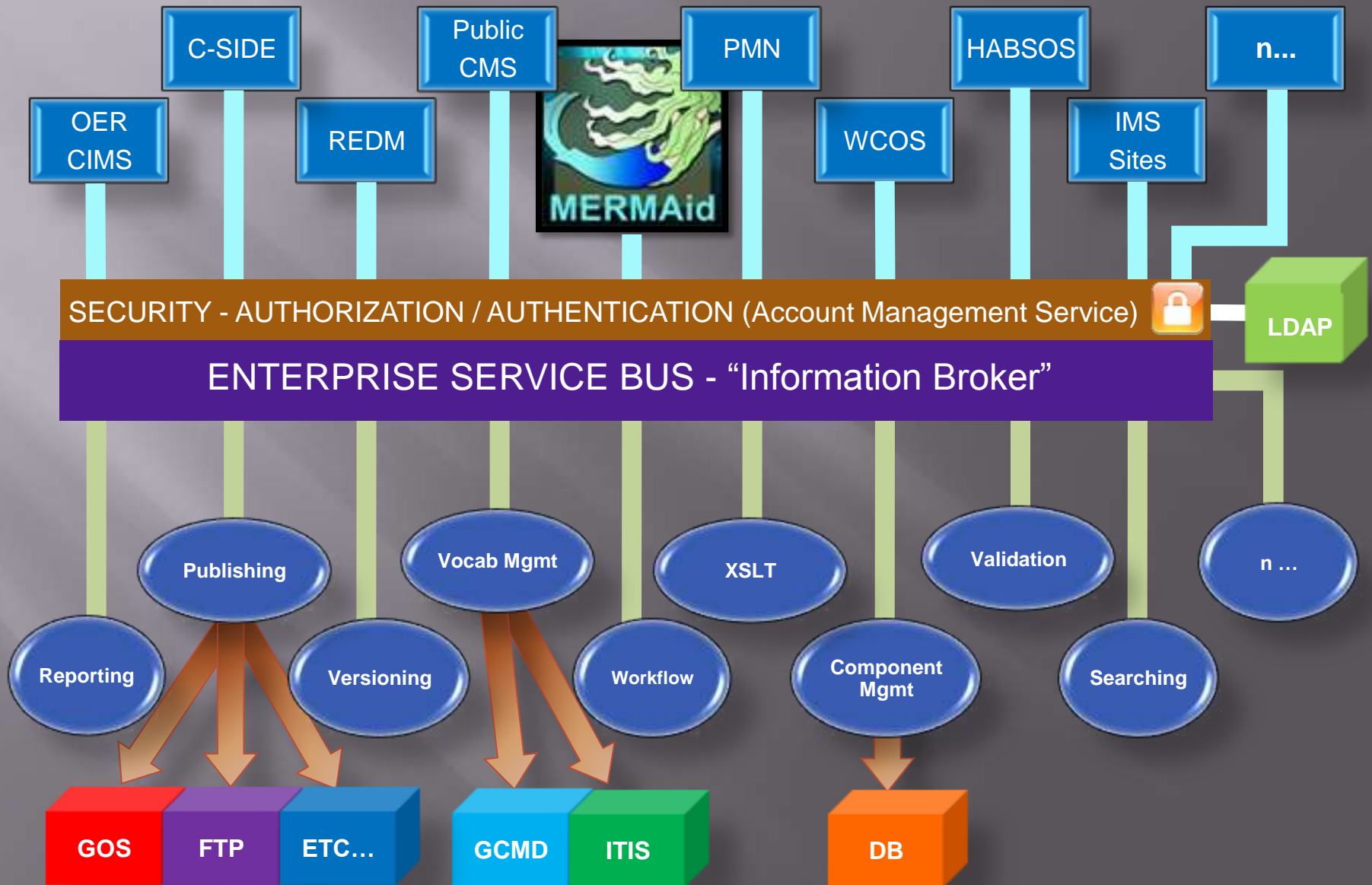
Louisiana Department of Natural Resources



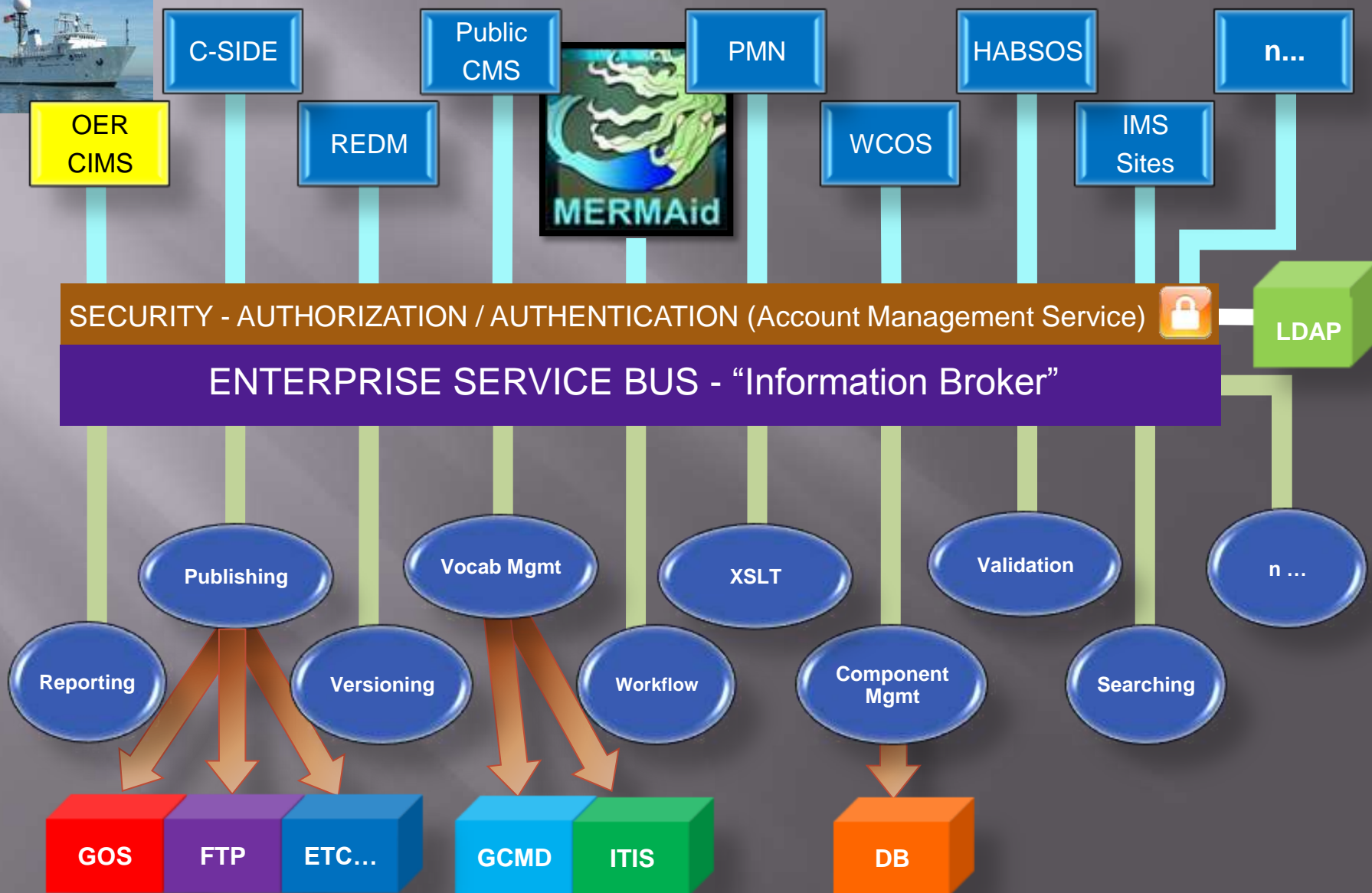
Louisiana Department of Natural Resources



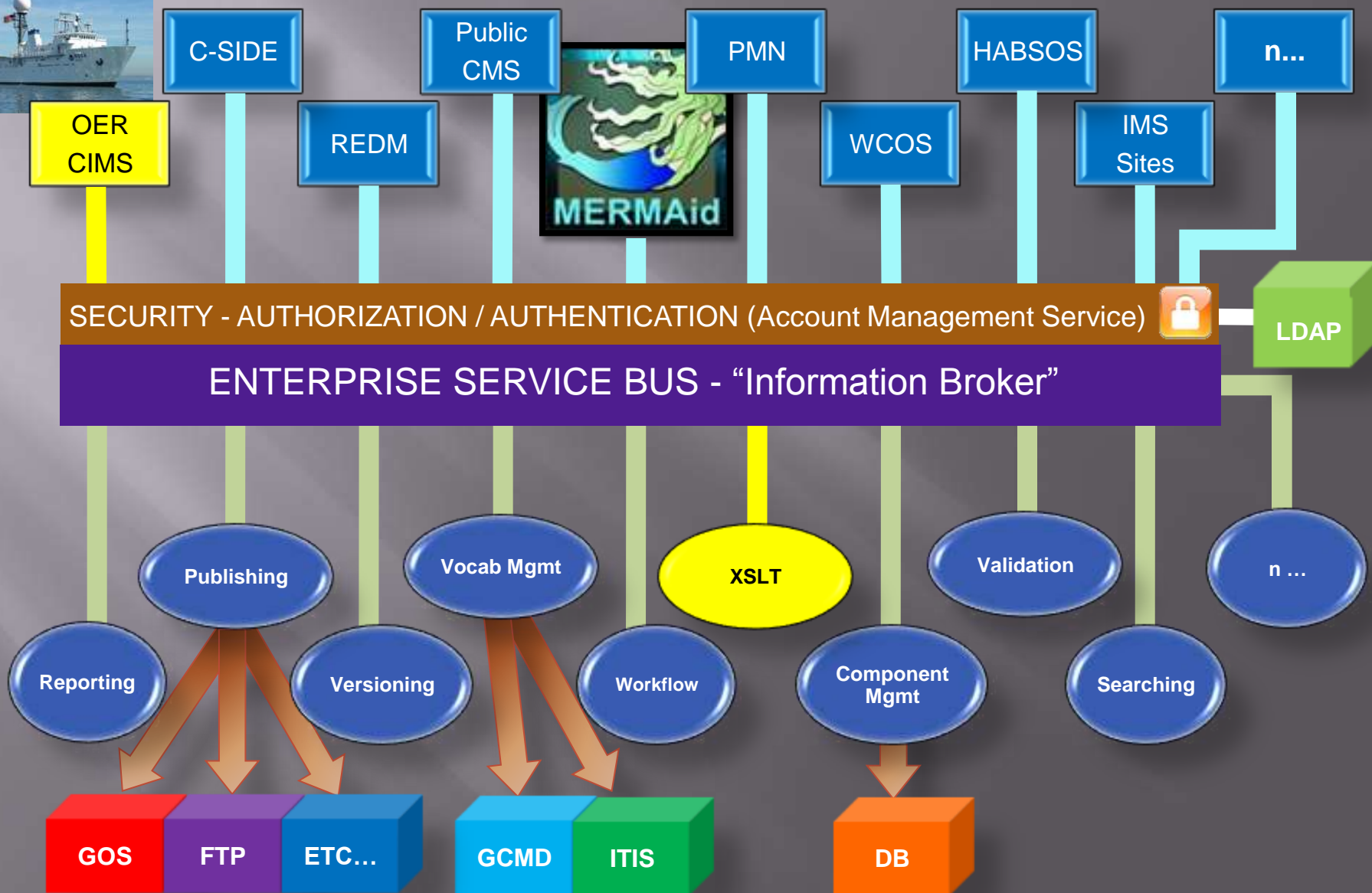
Office of Ocean Exploration and Research



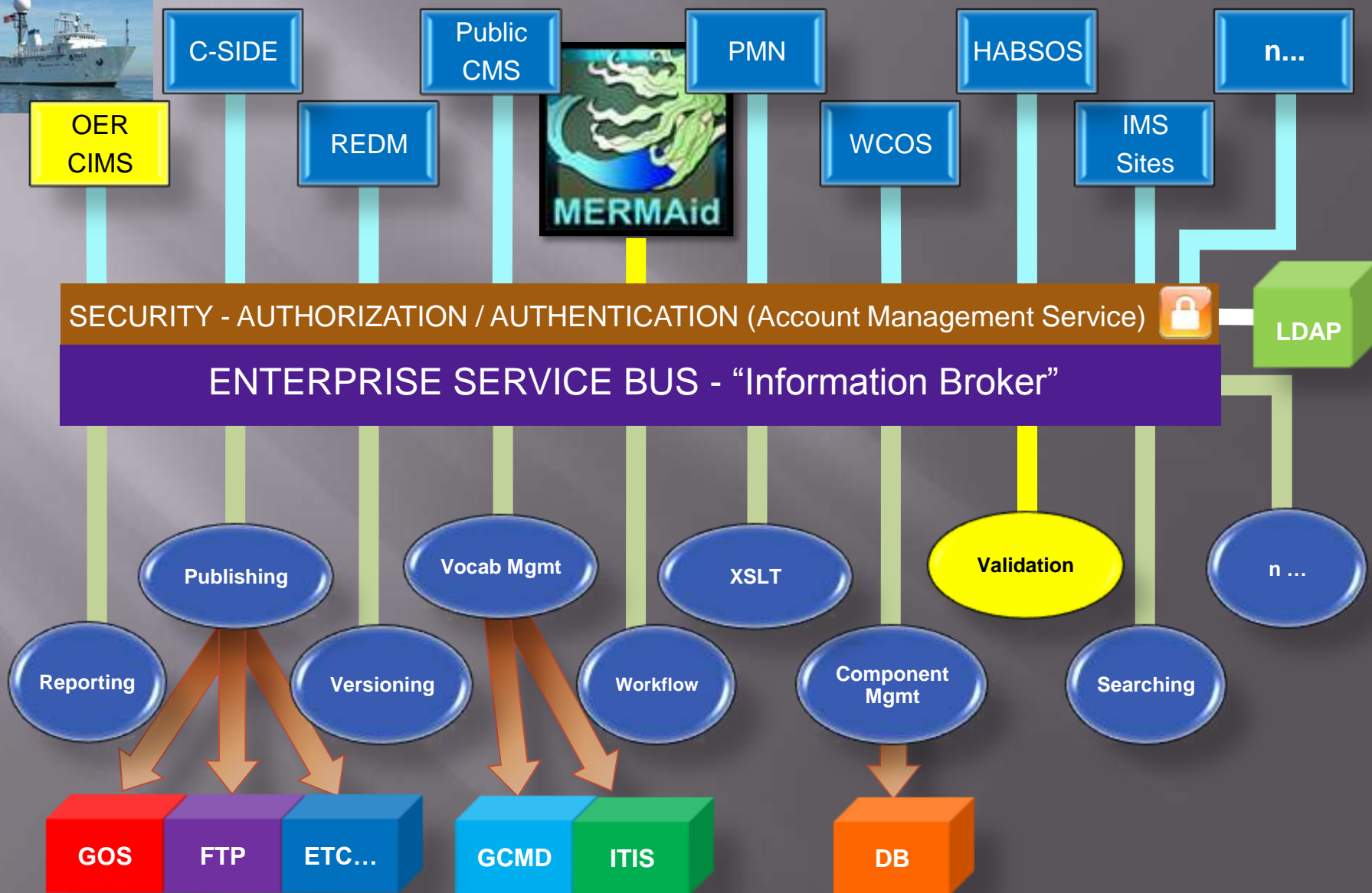
Office of Ocean Exploration and Research



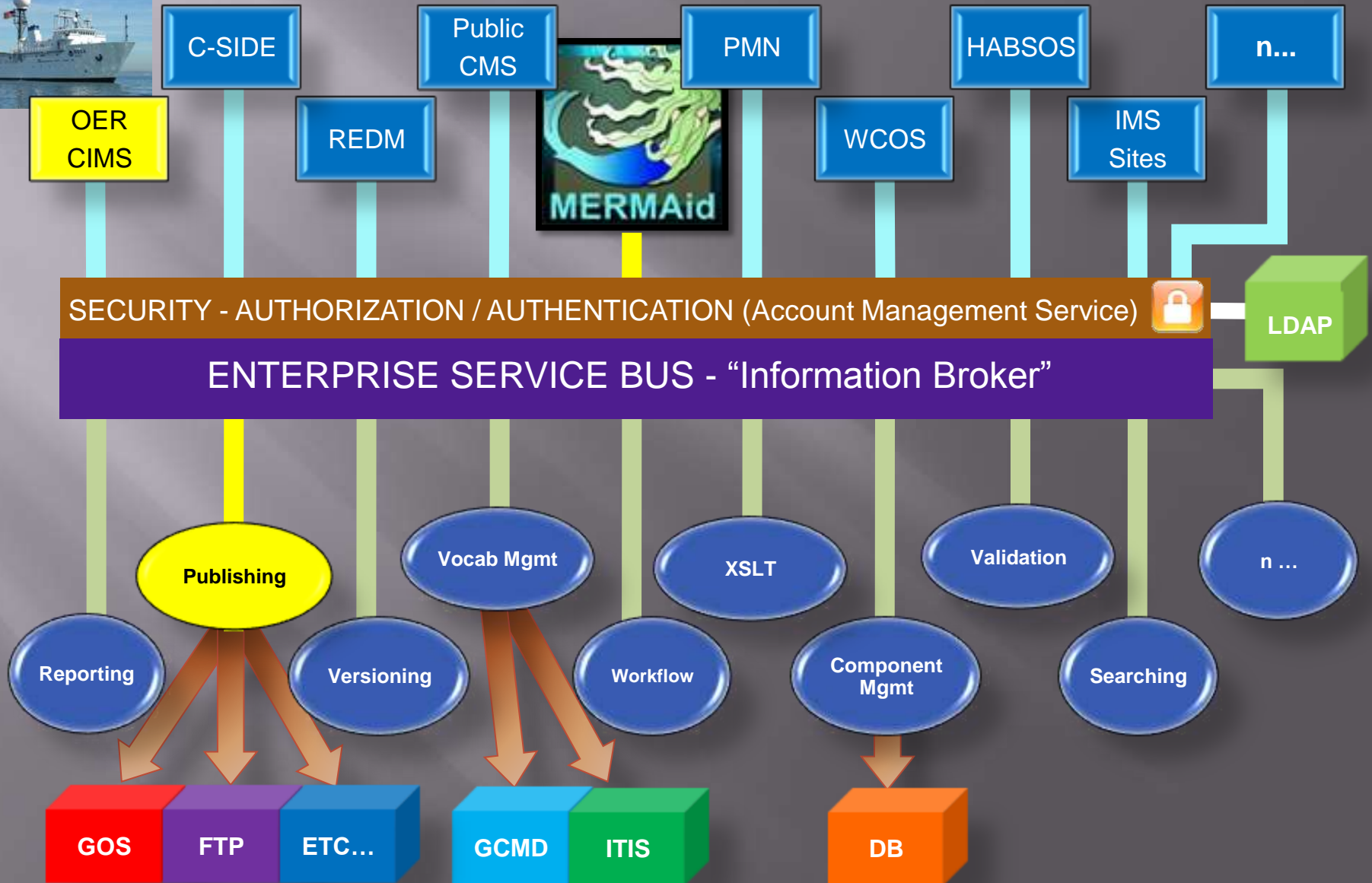
Office of Ocean Exploration and Research



Office of Ocean Exploration and Research



Office of Ocean Exploration and Research



- Profile support: FGDC Standard, Biological, Shoreline, Remote Sensing, ISO 19115, NAP Profile, EML, Sensor ML
- Output support: XML, HTML, Text, Tabbed, FAQ, MARC
- Ability to convert between all supported profiles
- Ability to publish to multiple data sources (GOS, NBII, REDM, NOS Data Explorer, etc.)
- Versioning of records
- WebDav support
- Search and replace
- Reporting (customized report capability)
- Distributed system
- Standalone version
- Centrally managed elements (contacts, distribution information, etc.)
- Enhanced user interface controls
- Ability to preserve formatting in data entry fields
- Direct integration with externally managed vocabularies
- External APIs for communication with external applications such as OER's CIMS, REDM, etc.
- Taxonomic hierarchy service
- Distributed instances
- Unique document identifier
- Customized templates
- User preferences to manage customizable settings
- Account management and reporting service
- Record review management screens
- Viewable workflow history
- Link management service
- Graphical view of geospatial information